

FIG. 4

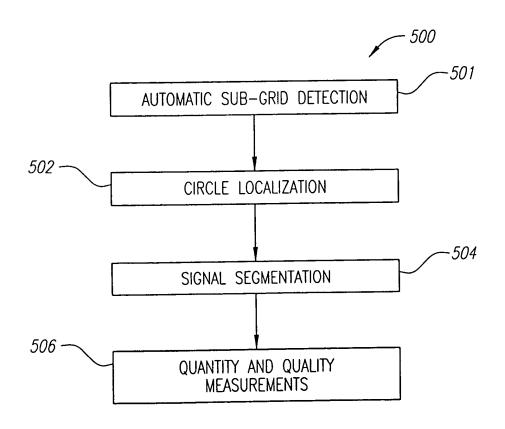
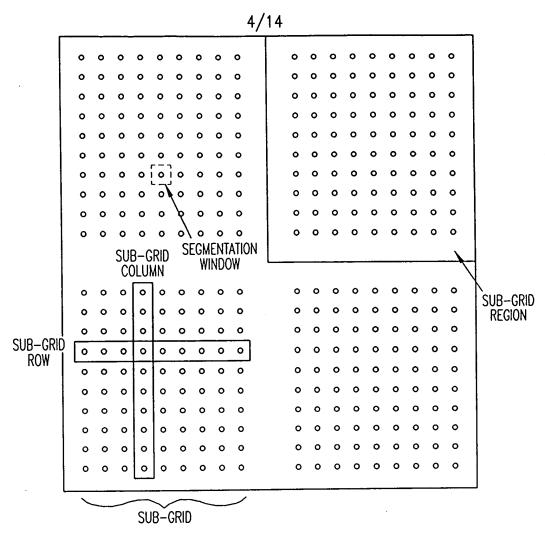


FIG. 5



2 x 2 MICROARRAY

FIG. 6

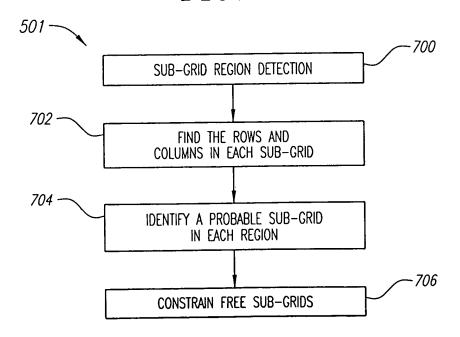
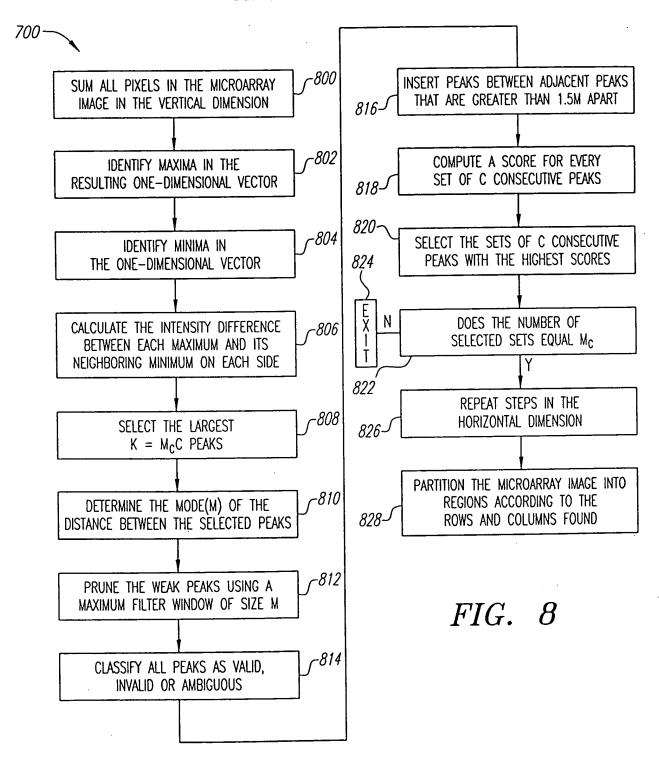


FIG. 7

SUB-GRID REGION DETECTION



SUB-GRID ROWS AND COLUMNS DETECTION

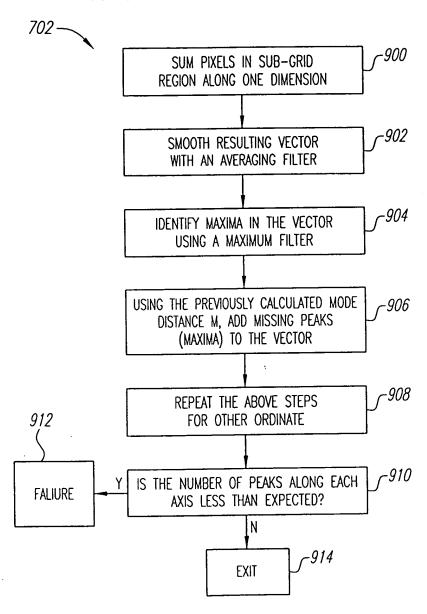


FIG. 9

IDENTIFYING SUB-GRIDS IN EACH SUB-GRID REGION

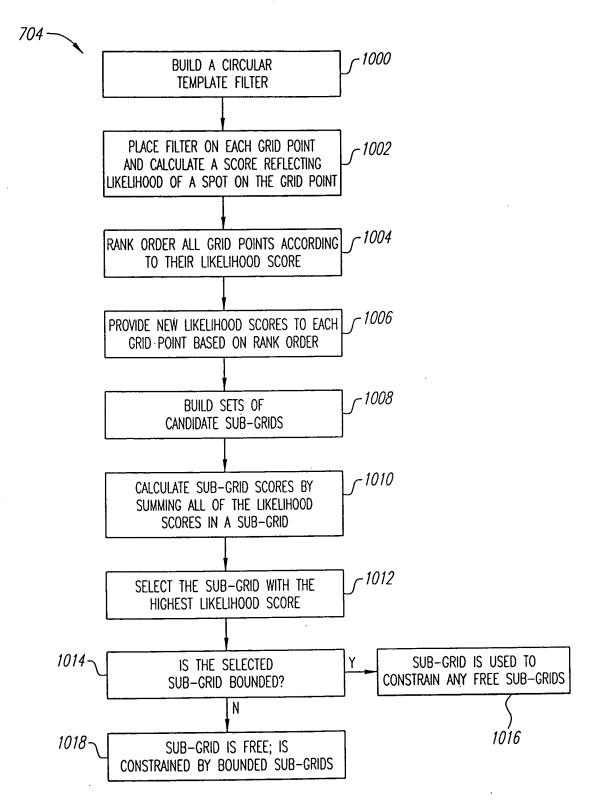
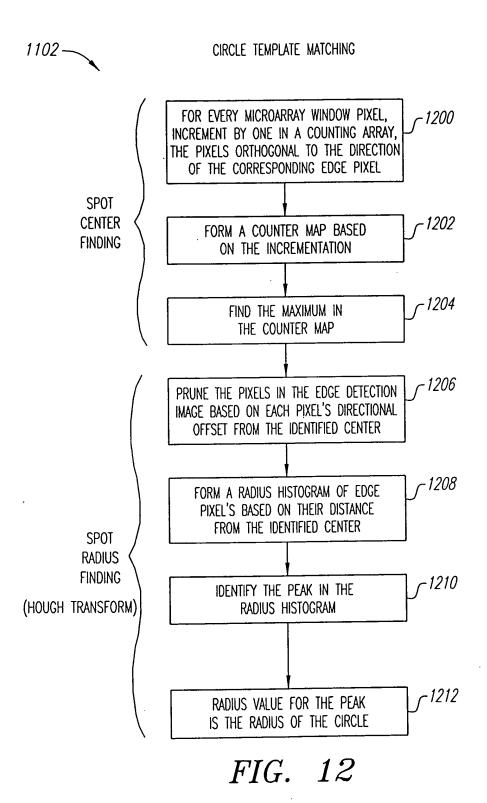


FIG. 10

EDGE DETECTION, E.G.
SOBEL DETECTOR
CANNY DETECTOR
PREWITT DETECTOR
ROBERTS DETECTOR
LAPLACIAN OR GAUSSIAN METHOD
ZERO-CROSS METHOD

FIG. 11

CIRCLE TEMPLATE MATCHING E.G. HOUGH TRANSFORM -1102



SIGNAL SEGMENTATION

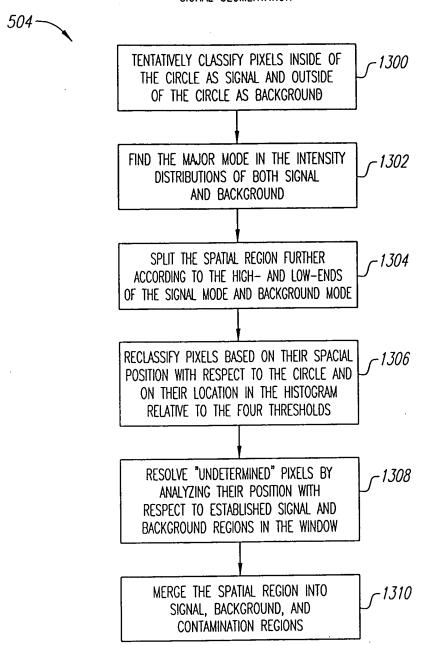


FIG. 13

MAJOR MODE FINDING

1302--1400 FORM AN INTENSITY HISTOGRAM FROM THE PIXELS INSIDE THE CIRCLE. -1402 IDENTIFY THE PEAK ABOVE THE MEDIAN IN THE HISTOGRAM _1404 IDENTIFY ALL HISTOGRAM BINS WITH PIXEL NUMBERS GREATER THAN 0.7 TIMES THE NUMBER OF PIXELS IN THE PEAK BIN REMOVE FROM CONSIDERATION THE IDENTIFIED -1406 BINS THAT ARE NOT PART OF THE CONNECTED GROUP OF IDENTIFIED BINS THAT INCLUDES THE PEAK BIN -1408 FIND THE SLOPE ON EACH SIDE OF THE PEAK IN THE HISTOGRAM -1410 FIT LINES ON THE HISTOGRAM FOR EACH OF THE TWO SLOPES -1412 IDENTIFY THE HISTOGRAM BINS WHERE THE FITTED LINES INTERSECT THE X-AXIS OF THE HISTOGRAM -1414 REPEAT THE ABOVE STEPS FOR THE PIXELS OUTSIDE THE CIRCLE - BUT IDENTIFY THE PEAK BELOW THE MEDIAN

FIG. 14

SIGNAL HISTOGRAM

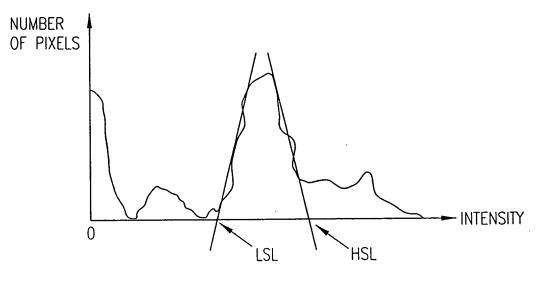


FIG. 15A

NUMBER OF PIXELS HBL HBL HBL HITENSITY

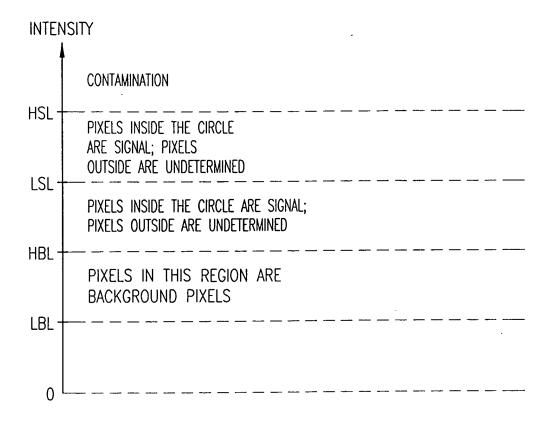


FIG. 16A

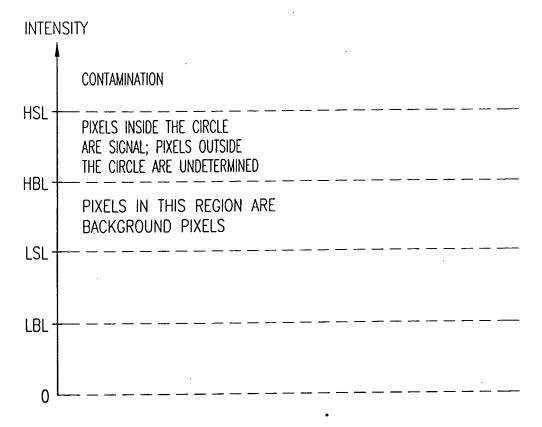


FIG. 16B

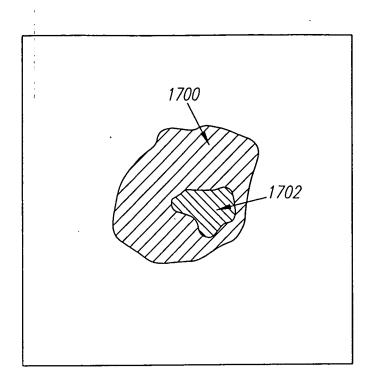


FIG. 17A

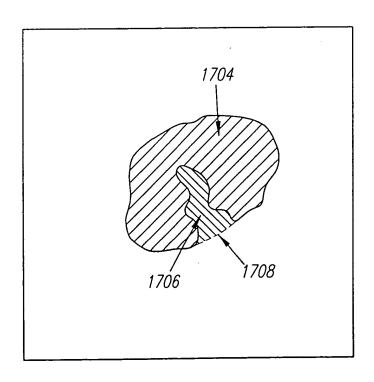


FIG. 17B